

Des Plaines, IL Mobile Home Mercury Response

Des Plaines, IL - EPA Region V

POLREP #3 [Printer Friendly Version](#)

On-Scene Coordinator - James Mitchell, OSC

5/26/2009

Emergency - Removal Action

Pollution Report (POLREP) #3

Site Description

██████████ recently purchased a mobile home at the Touhy Mobile Home Park. Mr. ██████████ was steam cleaning his carpets and noticed beads of mercury in the bathroom and on the kitchen floor. After this discovery he notified the National Response Center (NRC). OSC Mitchell reviewed the NRC Spill Report and contacted Ken Runkle at the Illinois Department of Public Health regarding the residential mercury spill. Together they called ██████████ about the mercury discovery. ██████████ stated that he recently purchased the mobile home about 10 days ago. After steam cleaning the carpets, he noticed beads of mercury in the toilet from the steam cleaner. He then looked for more mercury inside the home.

Based on this information, IDPH requested U.S.EPA's assistance to screen ██████████ home for mercury. OSC Mitchell along with START Markadel met ██████████ sister, ██████████ at 5:00pm on 8/7/2008 to gain access to the home and screen it for mercury. ██████████ arrived home at 6:00pm.

OSC Mitchell and START Markadel arrived at the Touhy Mobile Home Park at 5:00 pm. A Lumex mercury vapor analyzer was used to screen the property and mobile home for mercury vapors. Mercury screening was first performed outside the mobile home. Readings inside a 96 gallon garbage can and front lawn were below 0.3 micro-grams per cubic meter (ug/m3). Mercury vapor levels along the concrete walkway and stairs into the mobile home ranged from 10 to 60 ug/m3. Visible mercury could be seen in the soil adjacent to the stairs and on the stairs. PPE was donned prior to entering the home. Breathing zone measurements were collected in each room of the home. All measurements collected in the home were greater than 55 ug/m3. The Agency for Toxic Substances and Disease Registry (ATSDR) along with EPA has developed action levels for indoor mercury vapors in homes. The suggested action level acceptable for occupancy is 1 ug/m3.

In consultation with IDPH, OSC Mitchell told ██████████ that his home is not safe for occupancy and recommended that he not live in the home until mercury vapors could be brought down to acceptable levels. ██████████ agreed and said he can stay with a relative. OSC Mitchell then discussed the steps that would be necessary to remove mercury from the home as well as the associated cleanup costs. ██████████ said he did not have the financial means to remove mercury from his home as requested that EPA assist him with the cleanup.

OSC Mitchell mobilized EPA cleanup contractors, Environmental Quality Management (EQM) and Weston START contractor(s) to the Des Plaines mobile home on Friday August 8, 2008. At 10:00am, OSC Mitchell performed a health and safety briefing and outlined the tasks to be performed. Level C PPE with mercury vapor cartridges would be worn in until engineering controls bring mercury vapor levels down below 12.5 ug/m3. The following tasks were outlined

by OSC Mitchell:

1. Removal of elemental mercury from soil and stairs utilizing a mercury vacuum.
2. Wash stairs and walkway with mercury chelating agent i.e. Mersorb™
- 3.a) Bag personnel possessions and furniture and remove them from house.
 - b) Allow them to bake in the sun
 - c) Screen bags and items for the presence of mercury vapors with Lumex.
4. Cut, bag and remove all carpeting from home for disposal.
5. Vacuum all elemental mercury from home.
6. Wash all sub floors with Mersorb™
7. Place homeowners personnel possessions inside 2 onsite storage containers
8. Return to the home on Monday August 11, 2008 and screen the home again for mercury vapors.

On Monday August 11, 2008 ERS crews again vacuumed additional elemental mercury from the home. Large air movers were also placed inside the home in an effort to remove any pockets of mercury vapors. OSC Mitchell and START contractor Jay Rauh then screened the floor of the home for mercury vapors with the Lumex. Mercury vapors in excess of 30 ug/m³ were encountered along the walls of the bedroom, kitchen and inside the HVAC return air vent. The house was closed up, heat turned on and breathing zone measurements were collected. All rooms of the home exhibited mercury vapors in excess of 25ug/m³. In order to reduce mercury vapors to acceptable ATSTR occupancy levels, it was determined that removal of the sub-floor, walls and HVAC system would be necessary. OSC Mitchell determined that this action to be cost prohibitive and will discuss possible options with the homeowner.

After considering options, and due to the value of the home and the estimated clean-up costs, it was decided that the most prudent course of action would be to remove the mobile home from the site and dispose of it as mercury contaminated debris.

On Tuesday, September 9th, OSC Mitchell, ERRS (EQM), and START (WESTON) returned to the site to prepare the home for transportation and removal from the mobile home park.

START member Rauh calibrated a Lumex MVA and proceeded to screen the breathing zone in and around the home.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] – 5.139 ug/m³

Rauh screened around the perimeter of the home. The prevailing wind direction was from the

north, northwest

- North – 0.004 ug/m³
- East – 59.844 ug/m³ (near elemental mercury discovered near stairs)
- South – 0.786 ug/m³
- West – 0.056 ug/m³

After the screening indicated that the area was safe for work in Level D PPE, ERRS and a crew from the mobile home park begun preparing the trailer for transportation.

- The “skirt” surrounding the bottom of the trailer was removed
- Air was added to the tires
- Axels were inspected and lubricated
- Electricity was shut off and the wiring was removed from the bottom of the trailer
- Plumbing was disconnected from the trailer
- The stairway was moved
- The awning above the stairs was removed

After the stairs were moved, mercury beads were noted in the vicinity of the front door to the mobile home. ERRS used a mercury vacuum and shovel to remove the beads and placed the waste with other mercury waste for disposal. Rauh screened the ground level with a Lumex MVA where readings ranged up to 59.844 ug/m³.

Several bags of personal belongings were screened for the resident.

The mobile home was removed from the property on September 12, 2008.

Current Activities

After the mobile home was removed, visible and detectable elemental mercury remained on and near the concrete pad where the mobile home sat.

On September 15, 2008, START(WESTON) collected three composite surface soil samples for total mercury analysis.

Sample Result (mg/kg)

Grid-1 0.080

Grid-2 12

Grid-3 35*

*Section 5 of the US EPA Mercury cleanup handbook states that a previously used permissible level of total mercury level in residential yards is 16 mg/kg.

On September 16, 2008, ERRS (EQM) power-washed the concrete pads and sealed them with an epoxy sealant. Localized excavation was attempted with shovels as well.

On May 20, 2009 ERRS, START, and OSC Mitchell returned to the site. After removing the visqueen that had stabilized the site over the winter, a screening was performed with a Lumex MVA at near surface (1”-2” above the ground surface) to identify hot spots. Two hot spots were identified; both were near the concrete pad. See Figure 2 for screening locations and results.

ERRS used a small excavator to remove soil that caused elevated readings on the Lumex MVA. The soil was removed from the hot spots in 6” increments. The Lumex was used to

verify that the excavation was effective and to minimize the spoils volume. The material was placed in 55 gallon drums. See Figure 4 for excavation areas on a map.

After the excavation activities were complete, another round of screening with the Lumex MVA was performed at approximately 3' above the ground surface (approximate breathing zone of a small child). There was only a slight increase above background mercury levels recorded. See Figure 3 for screening locations and results.

Planned Removal Actions

No additional removal actions planned

Next Steps

Coordinate an appropriate clearance level with ATSDR.

Key Issues